

**REMARKS/ARGUMENTS**

This Amendment is being filed in response to the Final Office Action dated April 9, 2008. Reconsideration and allowance of the application in view of the remarks to follow are respectfully requested.

Claims 1-21 are pending in the Application. In this amendment, claim 16 is amended to include the subject matter of claim 18 as previously provided. Claim 18 is provided to make clear that the intensity of emitted light only decreases after the maximum intensity or in other words, maximum intensity means maximum intensity. Accordingly, no new matter is added by these amendments nor should any further search be required. Accordingly, consideration of claims 16 and 18 is respectfully requested.

In the Office Action, claims 1-5 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 6,096,496 to Frankel ("Frankel") in view of Publication entitled "Nonlinear Photoluminescence from Multiwalled Carbon Nanotubes; vol. 4461; pages 56-64; August 2001; to Brennan ("Brennan"). Claims 6-15 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Frankel in view of Brennan in further view of U.S. patent No. 7,129,554 to Lieber ("Lieber"). Claims 16-18 are rejected under 35 U.S.C.

§102(e) as allegedly anticipated by Brennan. Claims 19-20 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Brennan in view of U.S. Patent No. 6,514,113 to Lee ("Lee"). Claim 21 is rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Brennan in view of Frankel.

These rejections are respectfully traversed. It is respectfully submitted that claims 1-21 are allowable over Brennan alone and Frankel in view of Brennan alone and in view of any combination of Lieber and Lee for at least the following reasons.

Frankel shows a system (emphasis added) "that includes an electromagnetic spectral emitter that radiates a distinct electromagnetic code for each bead that uniquely identifies each bead ... The invention includes a large number of spectrally narrowed light emitting mechanisms for generating distinct optical codes." (See, Frankel, abstract.) As made clear in the objects of Frankel, "the [electromagnetic spectral emitter] tag system must be stable ... during synthesis, readout, assay, and storage." (See, Col. 6, lines 2-5.) In fact, Frankel is directed to "a bead tagging device that emits an electromagnetic wave whose spectrum is alternatively a distinct combination code, a distinct

permutation code, and a distinct permutation code whose separate temporal components may be a combination code; and whose spectrum therefore distinctly identifies each bead." (See, Col. 5, lines 33-38.) Accordingly, the operation of Frankel depends on each bead having a stable readout that uniquely identifies each bead from a large plurality of beads.

Brennan is cited for supplying that which is missing from Frankel with regard to claims 1 and 5 (see, page 4 of the Final Office Action).

Brennan is directed to studies of the nonlinear behavior of multiwalled carbon nanotubes (MWNT) and particularly the nonlinear photoluminescence behavior of the MWNTs using power law dependence studies. (See, Brennan, abstract.) Brennan further makes clear that different preparations of MWNTs exhibit similar properties (see, page 59, section 3.1). Further, as made clear by the photoluminescence studies of Brennan, the responses of the MWNT vary non-linearly depending on the intensity of incident excitation radiation (see, page 60, section 3.2). The Final Office Action maintains that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and have the optical

component comprising at least one photoluminescent carbon nanotube configured to emit light at wavelengths varying non-linearly with the intensity of said light, as taught by Brennen, thus allowing a means of protecting optical devices from high-intensity laser beam, as discussed by Brennen" (see, Final Office Action, page 5, lines 3-8), however, this position is respectfully refuted.

It is submitted that since different compositions of carbon nanotubes operate similarly, differentiation between beads incorporating carbon nanotubes would appear virtually impossible. Further, since carbon nanotubes exhibit non-linear photoluminescence with respect to incident excitation, excitation of a unique identification code amongst a plurality of beads also seems impossible. Accordingly, it is respectfully submitted that the carbon nanotubes of Brennan are particularly unsuitable to apply to the bead identification system of Frankel and in fact, the suggested combination renders the system of Frankel inoperable for its intended purpose.

"If when combined, the references 'would produce a seemingly inoperative device,' then they teach away from their combination." (In re Spinnoble, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969)). Further, there is no suggestion

to modify a prior art reference where the modification would render the device inoperable for its intended purpose. (In re Gordon, 733 F.2d 900 (Fed. Cir. 1984).) Since incorporation of the non-linear carbon nanotubes of Brennan into the bead identification system of Frankel, renders the Frankel system inoperative, it is respectfully submitted that Frankel and Brennan may not be suitably combined. Since the Final Office Action acknowledges that Frankel and Brennan alone fail to disclose or suggest all that is recited in claims 1 and 5, it is respectfully submitted that claims 1 and 5 are allowable and an indication to that effect is respectfully requested. Claims 2-4 and 6-15 respectively depend from one of claims 1 and 5 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration and allowance of each of dependent claims 2-4 and 6-15 is respectfully requested.

Regarding claims 16-18, Brennan is cited for allegedly showing "wherein an intensity of emitted light reaches a maximum at a wavelength greater than or equal to 600 nm and less than or equal to 700 nm" however, it is respectfully submitted that reliance on FIG. 1 of Brennan (see, Final

Office Action, bottom of page 10) is misplaced. Brennan in fact shows a maximum peak in the 780 nm region (see, Brennan, page 59, section 3.1, line 2 and FIG. 1).

Accordingly, it is respectfully submitted that the optical device of claim 16 is not anticipated or made obvious by the teachings of Brennan. For example, Brennan does not disclose or suggest, an optical device that amongst other patentable elements, comprises (illustrative emphasis added) "at least one photoluminescent carbon nanotube configured to emit, in response to an input of electromagnetic radiation, light over a range that includes wavelengths from 600 to 700 nm, wherein an intensity of emitted light reaches a maximum at a wavelength greater than or equal to 600 nm and less than or equal to 700 nm" as recited in claim 16. Each of Lieber and Lee are introduced for allegedly showing elements of the dependent claims and as such, do nothing to cure the deficiencies Brennan. Claims 17-21 respectively depend from claim 16 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration and allowance of each of dependent claims 17-21 is respectfully requested.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

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